

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/050321

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L29/49

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 160 300 A (WRISTERS DERICK J ET AL) 12 December 2000 (2000-12-12) the whole document	1-14
A	US 2001/003378 A1 (HARADA AKIHIKO ET AL) 14 June 2001 (2001-06-14) paragraph '0050! - paragraph '0051!; figures 5A-5E	1-14
A	EP 0 287 931 A (TOKYO SHIBAURA ELECTRIC CO ; TOSHIBA MICRO COMPUTER ENG (JP)) 26 October 1988 (1988-10-26) the whole document	1-14
A	US 5 158 903 A (HORI ATSUSHI ET AL) 27 October 1992 (1992-10-27) the whole document	1-14

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

12 July 2004

Date of mailing of the international search report

19/07/2004

Name and mailing address of the ISA

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5

Method of manufacturing a gate electrode having a first amorphous layer, doping and thermally activating said layer and providing a second layer on top of the activated first gate layer

2. claims: 6-14

MIS semiconductor device having a gate electrode composed of a bottom layer whose doping level is 10^{19} ions/cm³ or higher, and a second layer on top of said bottom layer

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/050321

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6160300	A	12-12-2000	NONE	
US 2001003378	A1	14-06-2001	JP 2000031475 A DE 19909815 A1	28-01-2000 20-01-2000
EP 0287931	A	26-10-1988	JP 1891072 C JP 6016556 B JP 63255965 A DE 3850599 D1 EP 0287931 A2 KR 9200636 B1 US 5612236 A	07-12-1994 02-03-1994 24-10-1988 18-08-1994 26-10-1988 17-01-1992 18-03-1997
US 5158903	A	27-10-1992	JP 3218639 A	26-09-1991